

Technical Data Sheet

Advanced Materials

ARATHANE[®] 5888 IS US / ARATHANE[®] 5888 PO US

TWO-COMPONENT POLYURETHANE CASTING / POTTING SYSTEM

Description

Arathane[®] 5888 IS US / Arathane[®] 5888 PO US is a solvent-free, two-component flexible polyurethane casting system designed for casting or vacuum potting of high voltage electrical devices, especially instrument transformers and for encapsulation of electronic components. This system exhibits good working life at ambient temperature. After moderate cure at elevated temperature it exhibits good mechanical and electrical properties. It is UL 94 V0 compliant at 6 mm thickness.

Features

- Low viscosity
- Long working life at ambient temperature
- Good mechanical properties
- Good electrical properties
- UL 94 V0 compliant at 6 mm

Typical Properties

	Isocyanate	Polyol
	Arathane[®] 5888 IS	Arathane[®] 5888 PO
Color	dark brown	black
Appearance	liquid	liquid
Specific gravity (AMTM0050)	1.24	1.64
Viscosity, 25°C (77°F), cps. (mPas) (AMTM0026)	30 - 50	25,000 – 30,000

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Processing Characteristics

The Arathane[®] 5888 IS and Arathane[®] 5888 PO components are mixed according to the specific ratio at ambient temperature, preferably using automatic dosing and mixing equipment. If the Arathane[®] 5888 PO component has been stored for an extended time, it is recommended to stir well the complete content of the container. The fillers present in Arathane[®] 5888 IS and Arathane[®] 5888 PO have a tendency to separate during extended storage. This may be prevented by periodic slow agitation of the containers.

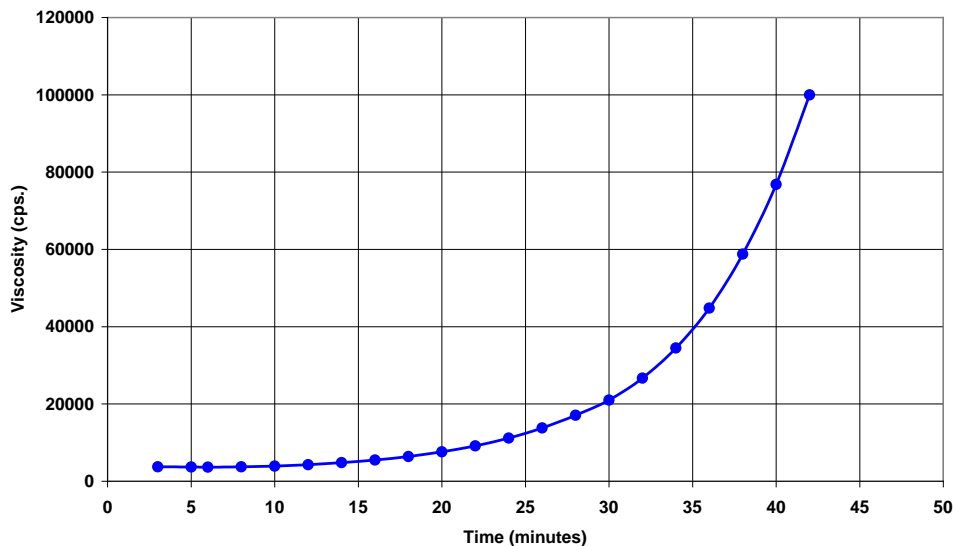
Mix ratio by weight (Arathane [®] 5888 IS / Arathane [®] 5888 PO)	13 / 100
Mix ratio by volume (Arathane [®] 5888 IS / Arathane [®] 5888 PO)	17.2 / 100
Initial mixed viscosity, 25°C, cps (mPas)	4,000 – 5,000

Cure Requirements

It is recommended to cure the Arathane[®] 5888 IS / Arathane[®] 5888 PO system at moderate temperatures in order to achieve full physical properties. For example, it can be cast in pre-heated molds at temperatures of 30-50°C. Full properties can be achieved by curing for 6 hours at 80°C.

Working life

Viscosity v. Time
1500 gram mass at 30°C



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Typical Cured Properties (cured 90 minutes /40°C + 6 hours/80°C)

Property	Test Method	Value
Color	Visual	Black
Glass transition temperature (°C)	TMA	2 - 4
Hardness	Shore D	50 - 55
Ultimate tensile strength, 25°C (psi)	ASTM D 412	900 - 1200
Ultimate tensile elongation, 25°C, %	ASTM D 412	45 - 65
Tear strength, 25°C (ppi)	ASTM D 624	205
Coefficient linear thermal expansion, ppm/°C	TMA	
@ -40 to -10°C		55
@ -10 to 100°C		135
Thermal conductivity (W/m-k)	ISO 8894/90	0.82
Linear shrinkage on cure (%)	ASTM D 2566	0.80
Flame resistance	UL 94 V0 at 6 mm	compliant
Water absorption (% wt gain)	ASTM D 570	
@ 23°C - 24 hours		0.06
@ 23°C - 7 days		0.10
Electrical Properties	Test method	Value
Dielectric strength, 23°C, 2 mm (kv/mm)	IEC 60243	27.8
HV arc resistance (seconds)	ASTM D 495	170
HV tracking and erosion, 2.5 kv	IEC 60587	Class 1A 0
Dielectric constant, 23°C	IEC 60250	
@ 1 kHz		4.4
@ 10 kHz		4.2
Dielectric constant, 125°C	IEC 60250	
@ 1 kHz		6.1
@ 10 kHz		5.9
Dissipation factor, 23°C	IEC 60250	
@ 1 kHz		0.062
@ 10 kHz		0.034
Dissipation factor, 125°C	IEC 60250	
@ 1 kHz		0.056
@ 10 kHz		0.024
Volume resistivity, 23°C (ohm-cm)	IEC 60093	7.4 E13
Volume resistivity, 125°C (ohm-cm)	IEC 60093	3.3 E10
Surface resistivity, 23°C (ohm)	IEC 60093	4.7 E16
Surface resistivity, 125°C (ohm)	IEC 60093	4.0 E13

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Storage

Arathane[®] 5888 IS US (isocyanate component) should be stored in a dry place, in the sealed original container, at temperatures between 2°C and 18°C (36°F and 64°F). Under these storage conditions the shelf life is 6 months from the date of manufacture. Tightly reseal container immediately after use. Purging the partially used containers with dry nitrogen is strongly recommended because Arathane[®] 5888 IS US is very moisture sensitive. The product should not be exposed to direct sunlight.

Arathane[®] 5888 PO US (polyol component) should be stored in a dry place, in the sealed original container, at temperatures between 2°C and 40°C (35.6°F and 104°F). Under these storage conditions the shelf life is 6 months from the date of manufacture. The product should not be exposed to direct sunlight.

Precautionary Statement

Huntsman Advanced Materials Americas LLC maintains up-to-date Material Safety Data Sheets (MSDS) on all of its products. These sheets contain pertinent information that you may need to protect your employees and customers against any known health or safety hazards associated with our products. Users should review the latest MSDS to determine possible health hazards and appropriate precautions to implement prior to using this material.

First Aid!

Refer to MSDS as mentioned above.

KEEP OUT OF REACH OF CHILDREN

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